US010837432B1

(12) **United States Patent**
Kaminski

(10) **Patent No.: US 10,837,432 B1**
(45) **Date of Patent: Nov. 17, 2020**

(54) **TABLETOP INFLATION SYSTEM**

(71) Applicant: **Mike Kaminski**, San Jose, CA (US)

(72) Inventor: **Mike Kaminski**, San Jose, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/826,173**

(22) Filed: **Mar. 21, 2020**

Related U.S. Application Data

(60) Provisional application No. 62/889,564, filed on Aug. 21, 2019.

(51) **Int. Cl.**

F04B 33/00	(2006.01)
B65B 31/04	(2006.01)
B65B 39/10	(2006.01)
F04B 39/12	(2006.01)
B65B 39/08	(2006.01)
F04B 17/03	(2006.01)
B65B 39/06	(2006.01)

(52) **U.S. Cl.**
CPC ***F04B 33/00*** (2013.01); ***B65B 31/044*** (2013.01); ***B65B 31/048*** (2013.01); ***B65B 39/06*** (2013.01); ***B65B 39/08*** (2013.01); ***B65B 39/10*** (2013.01); ***F04B 17/03*** (2013.01); ***F04B 33/005*** (2013.01); ***F04B 39/12*** (2013.01); ***F04B 39/123*** (2013.01)

(58) **Field of Classification Search**
CPC F04B 17/03; F04B 39/12; F04B 39/123; F04B 33/005; F04B 33/00; B65B 31/04; B65B 31/044; B65B 31/048; B65B 39/10; B65B 39/06; B65B 39/08
USPC 141/10, 114, 314, 315
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,715,004	A *	8/1955	Fox	B65B 39/04 248/101
3,851,444	A *	12/1974	Merat	B65B 55/24 53/167
4,305,242	A *	12/1981	Barathe	B65B 43/54 141/314
6,305,438	B1 *	10/2001	Sjoholm	B65B 3/26 141/114
8,186,392	B2 *	5/2012	Gustafsson	B65B 39/08 141/114
8,555,935	B2 *	10/2013	Gustafsson	B65B 39/10 141/166

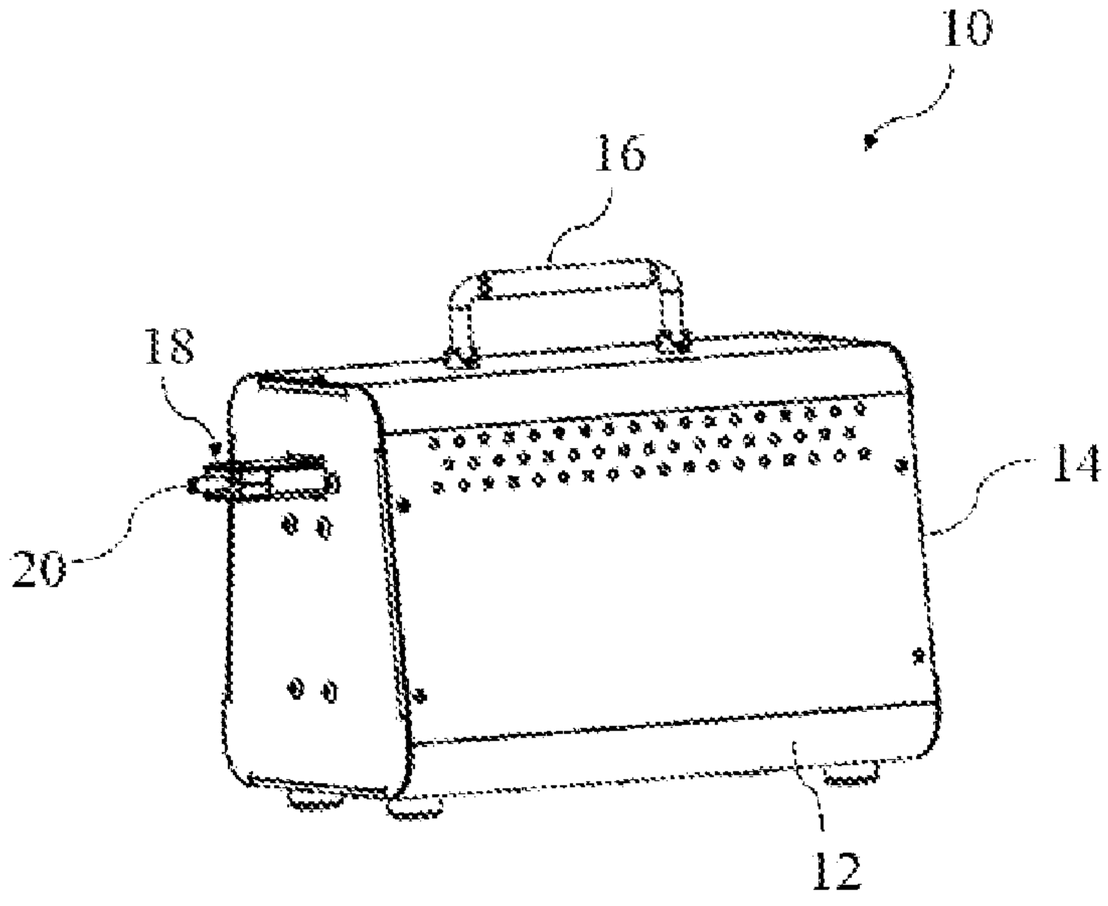
(Continued)

Primary Examiner — Christopher S Bobish
(74) *Attorney, Agent, or Firm* — Barry Choobin; Patent 360

(57) **ABSTRACT**

The present invention is directed to an inflation system comprising a housing; a clamp assembly, the clamp assembly having an elongated upper clamp and an elongated lower clamp, the upper clamp having a proximal end and a distal end, the lower clamp having a proximal end and a distal end, the upper clamp is mounted to the housing, the lower clamp is pivotally mounted along a lateral axis, the lateral axis is perpendicular to length of the lower clamp and between the proximal end and the distal end of the lower clamp, the proximal end of the upper clamp and the proximal end of the lower clamp protrudes from an opening in the housing; an upper cushion coupled to the proximal end of the upper clamp; a lower cushion coupled to the proximal end of the lower clamp such that the lower cushion and the upper cushion faces each other, the lower cushion and the upper cushion forms a passageway; and an air hose having a nozzle at one end wherein a portion of the air hose and a portion of the nozzle are retained in the passageway.

17 Claims, 11 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

8,745,960	B2 *	6/2014	Kannankeril	B31D 5/0073 53/284.7
9,873,232	B2 *	1/2018	Eckhardt	B29C 73/166
10,160,176	B2 *	12/2018	Sperry	B31D 5/0073
2003/0163976	A1 *	9/2003	Perkins	B29C 66/439 53/403
2009/0078337	A1 *	3/2009	Gustafsson	B65B 39/004 141/313
2019/0170298	A1 *	6/2019	Zhang	F17C 5/00
2020/0024059	A1 *	1/2020	Wetsch	B31D 5/0073

* cited by examiner

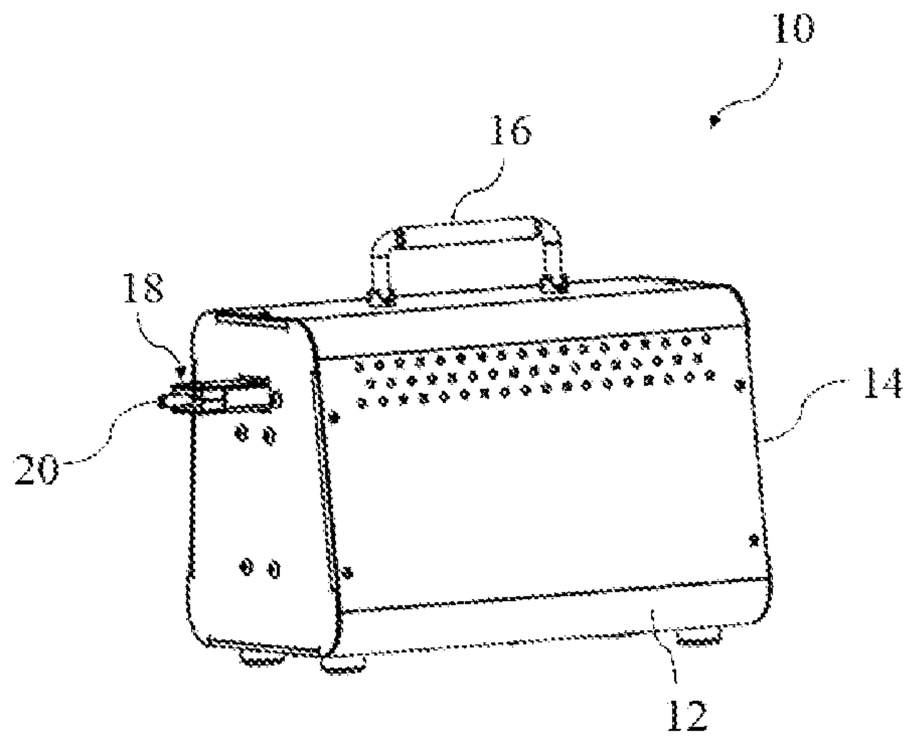


Fig. 1

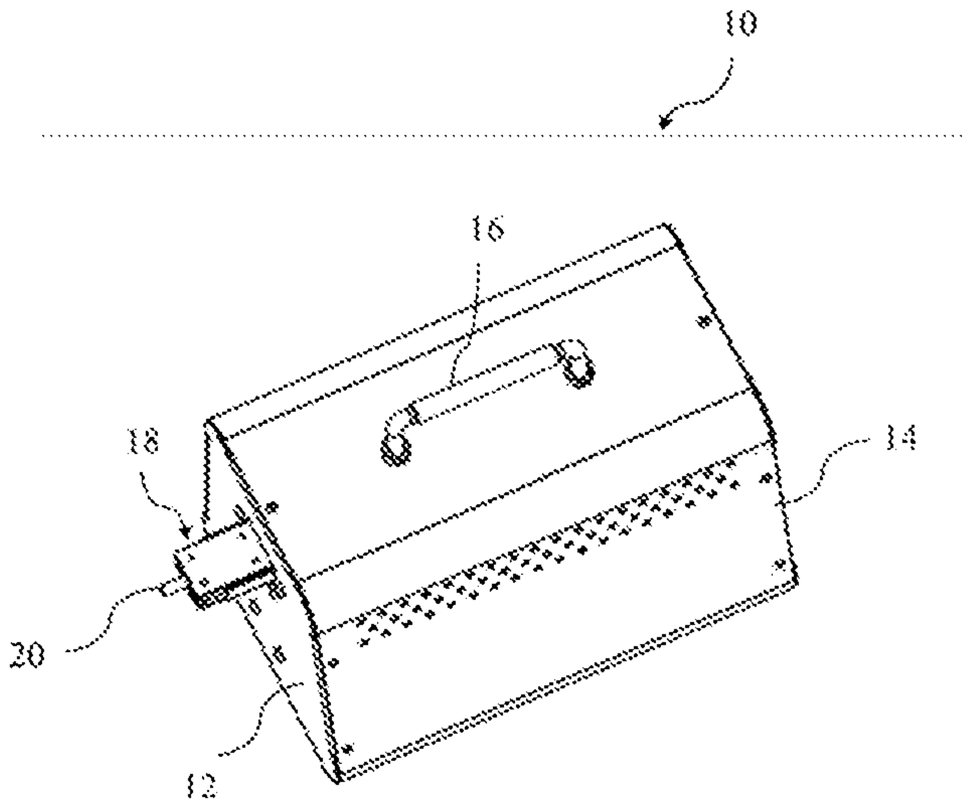


Fig. 2

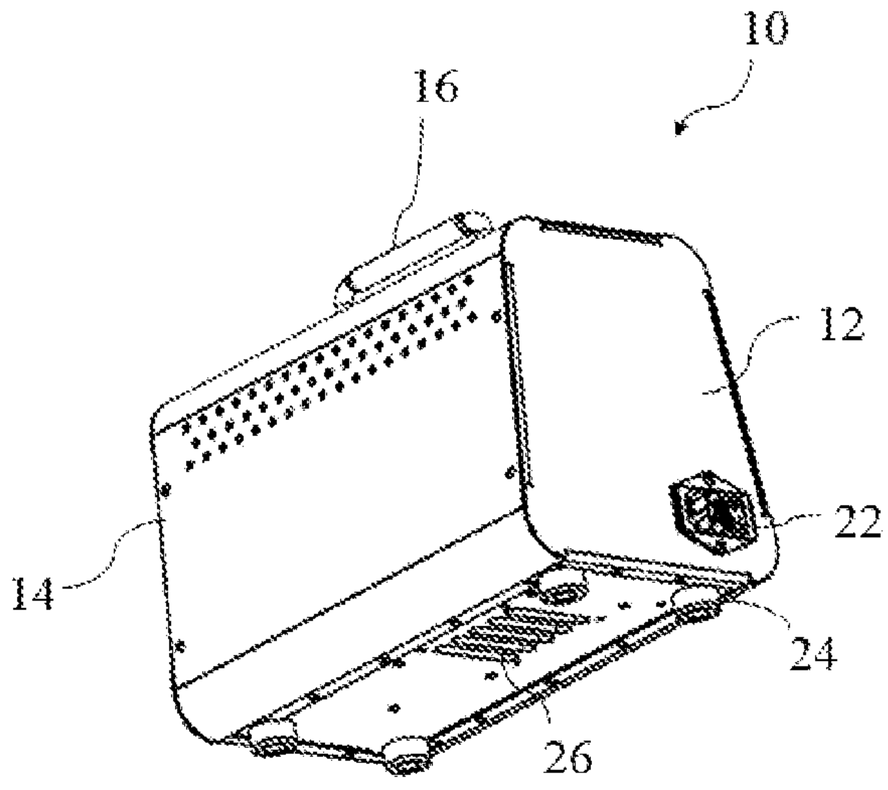


Fig. 3

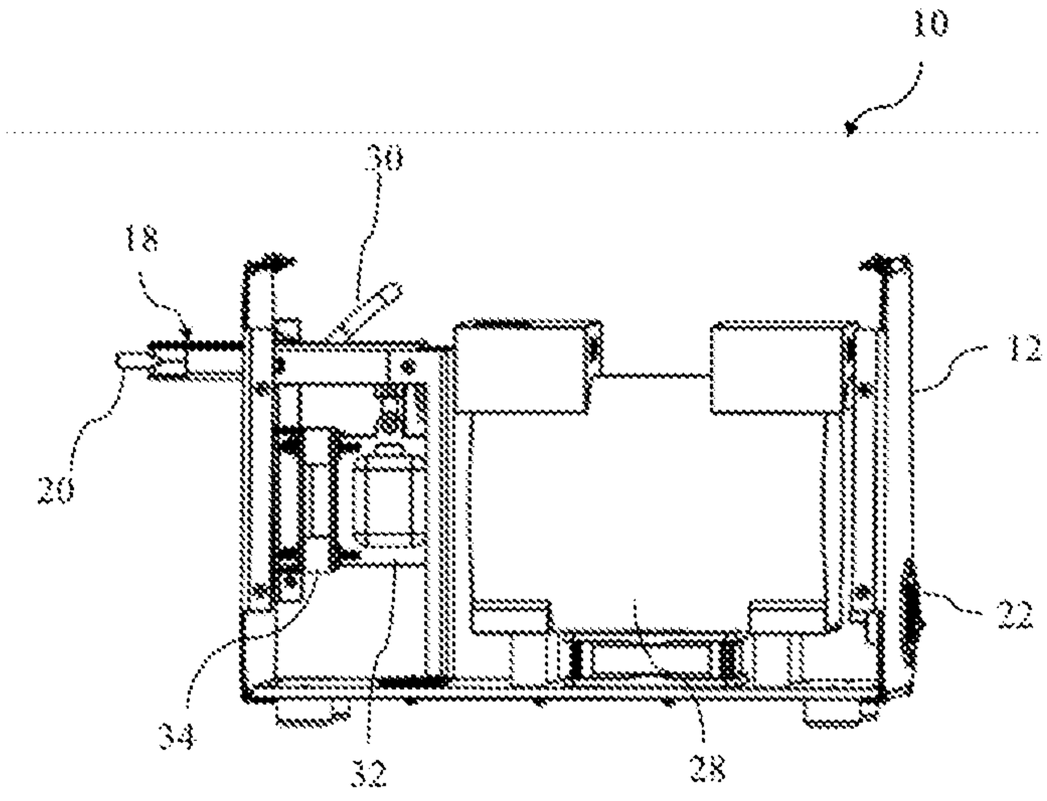


Fig. 4

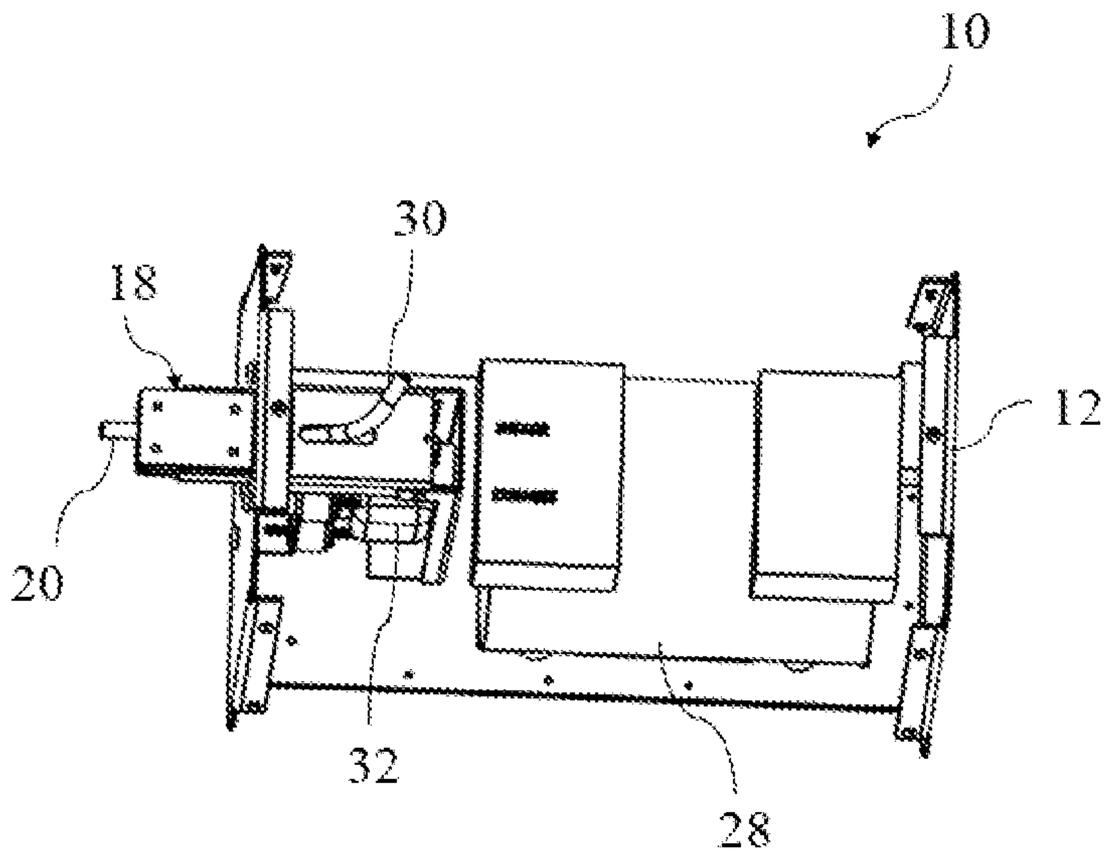


Fig. 5

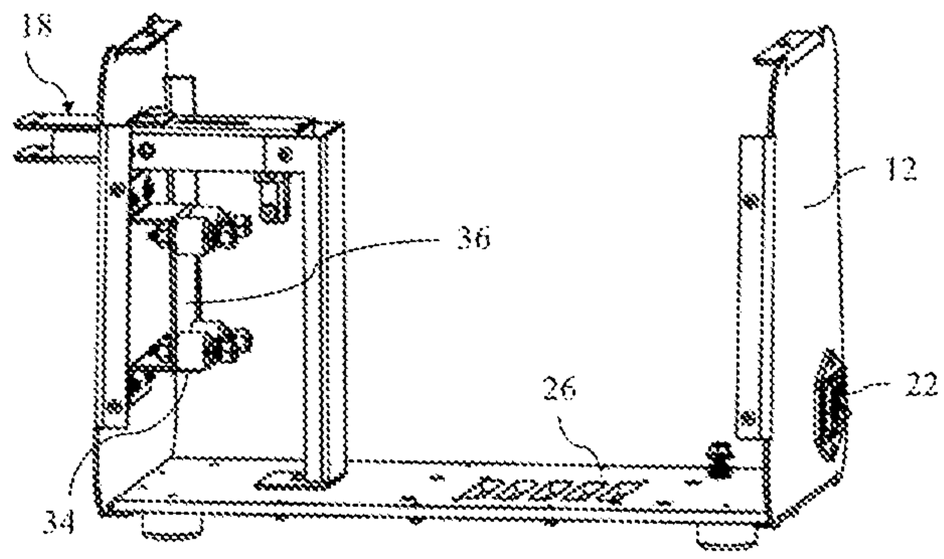


Fig. 6

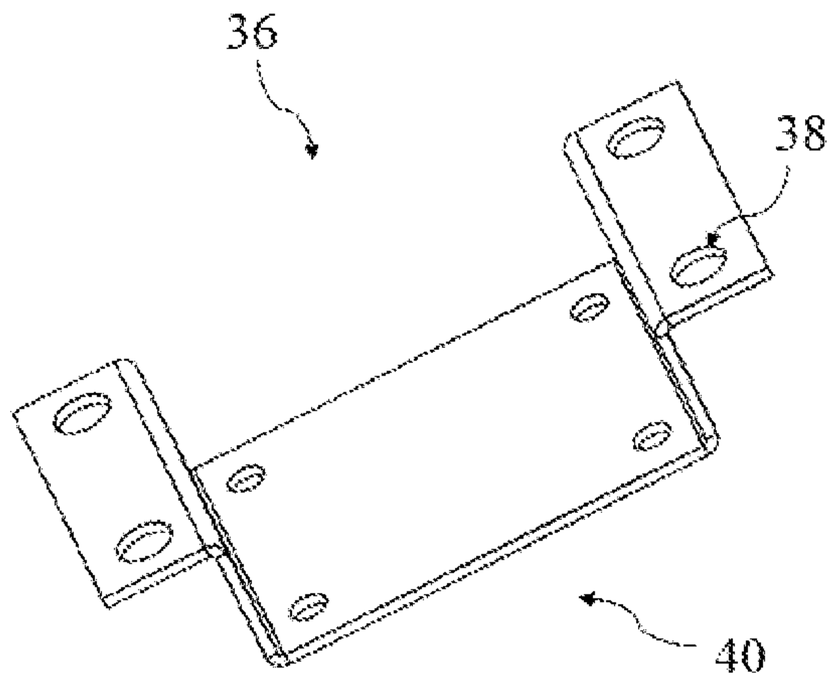


Fig. 7

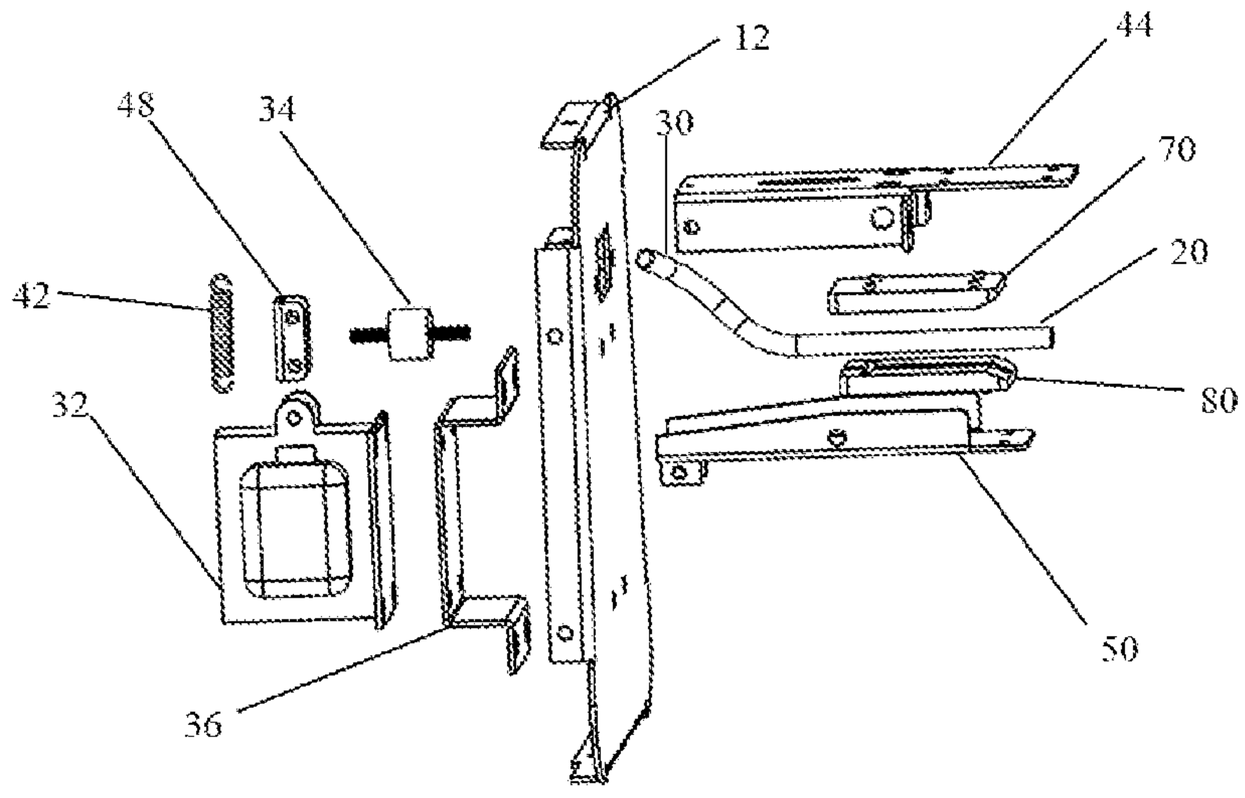


Fig. 8

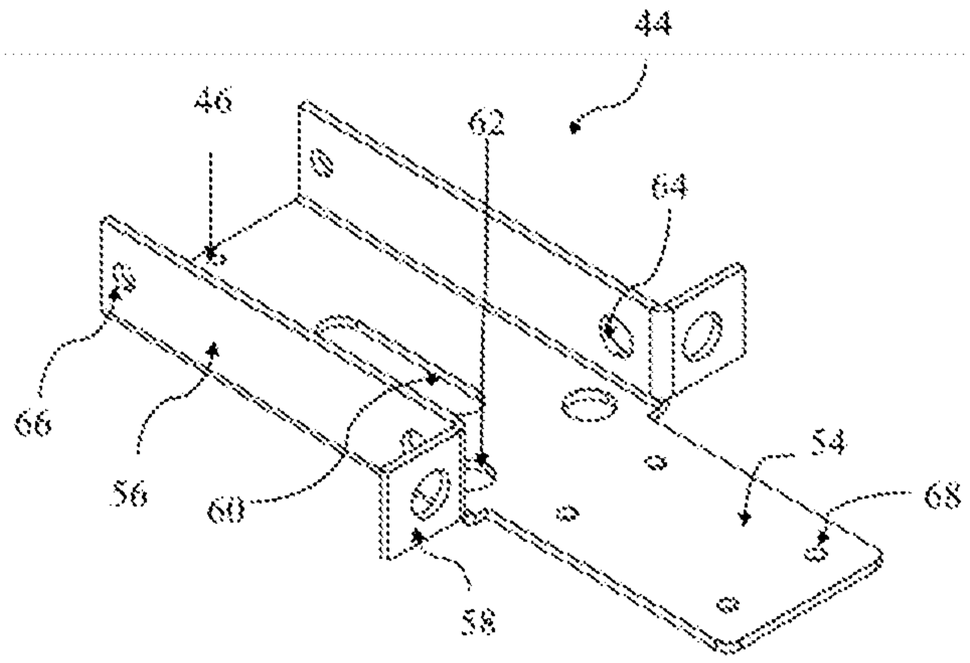


Fig. 9

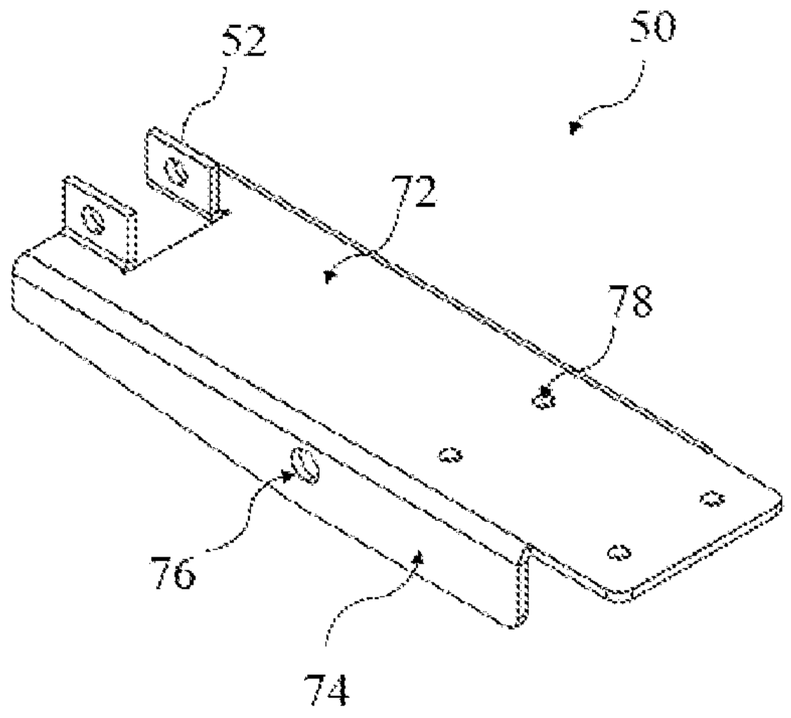


Fig. 10

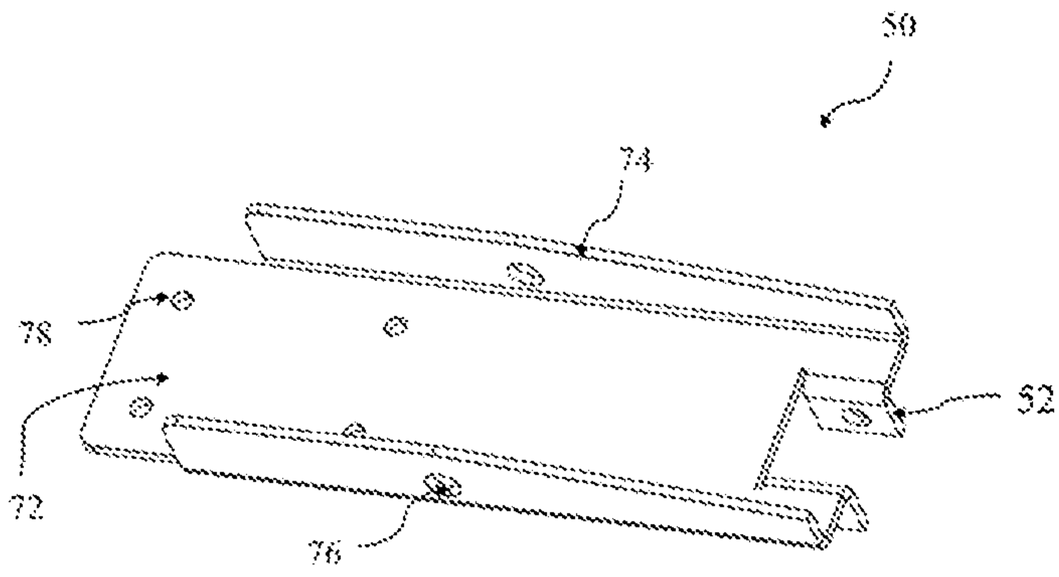


Fig. 11

TABLETOP INFLATION SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to the U.S. provisional patent application Ser. No. 62/889,564 filed Aug. 21, 2019, which is incorporated herein by reference in its entirety.

FIELD OF INVENTION

The present invention relates to a compact inflation system, and in more particularly, relates to a system and method for inflating packaging airbags.

BACKGROUND

The packaging is a means to protect an article from contamination, dirt, and damage. The packaging is of utmost significance in the manufacture, sale, and transport of articles. The primary purpose of the packaging is to protect an article from the environment. For example, packaging can protect an article from dust, water, etc. Also, the packaging has a primary function to protect an article from external shocks and bumps. This function of packaging is of importance in the transportation of fragile articles which are very suspectable to damage during transportation. Good packaging can protect an article from damage due to shocks or bumps both during transportation and mishandling of the article.

Different kinds of packaging materials are commercially available, such as paper, plastic, and cardboard. Each packaging material has its own uses and indications. The paper can be used to protect an article from dirt. The plastic can protect an article from both dirt and liquid. Cardboards, on the other hand, are sturdy and can provide limited protection against shocks. For enhanced protection against shocks, materials such as Styrofoam, foam, bubble packs, crumpled paper, or airbags, each being inserted inside a bag or container are popularly used.

Airbags are bags that can be inflated to protect an article contained in the bag. The airbag can be made of polyethylene or other materials having similar properties. The airbag is manufactured as a sheet having two overlapping plies. The two plies have air cavities which can be inflated with air. The air cavities are fluidly connected to an inflation port through unidirectional flow valves and inflatable tubes. The air can enter from the inflation port and uniformly distributes to the plurality of inflatable cavities. The unidirectional flow valve can be provided at the inflation port and prevents leaking of air. Moreover, the entry of each cavity can be provided with a unidirectional flow valve. This can be helpful in case, any cavity is ruptured, while the unidirectional flow valve prevents leakage of air from other cavities. The airbag can be manufactured in the form of a container. For example, airbag containers are used to contain glass bottles for protection against bumps. Such airbag containers have become quite popular for the transportation of wine bottles.

At retail outlets, costly glass articles, such as wine bottles are packed in airbag containers for protection against bumps. The airbag container is available as a sheet, which is inflated by a manual air pump. However, the use of manual pumps is both laborious and time-consuming. Thus, a need is appreciated for an improved inflation system for packaging airbags.

SUMMARY OF THE INVENTION

The principal objective of the present invention is therefore directed to an air inflation system for use in inflating packaging airbags.

It is an additional objective of the present invention that the inflation system is portable and compact.

It is a further objective of the present invention that the inflation system makes less noise during operation.

It is another objective of the present invention that the airbag can be mounted to the inflation system for inflating the airbag.

Yet it is another objective of the present invention that the inflation system is economical to manufacture and easy to use.

In one aspect, the present invention is directed to an inflation system for inflating packaging airbags. The inflation system comprises an air compressor housed in a compact housing. The air compressor fluidly connected to an air pressure regulator for controlling the air pressure within pre-determined limits. An air hose connects an outlet of the air regulator to a nozzle, where the nozzle can couple to an inflation port of the airbag for inflating the airbag.

In another aspect, the inflation system comprises a duckbill type clamp assembly, the clamp assembly comprises an upper clamp and a lower clamp positioned against each other. The upper clamp having a proximal end and a distal end, and the lower clamp having a proximal end and a distal end. The upper clamp is stationary, while the lower clamp is pivotally coupled near center of its length, resulting in the lower clamp to pivot around its pivot joint and relative to the first clamp. Each of the upper clamp and the lower clamp mounts an upper cushion and a lower cushion respectfully. The upper cushion and the lower cushion positioned near the proximal ends of the upper clamp and the lower clamp. The upper cushion and the lower cushion both having a longitudinal groove, which together forms a passageway for the air hose, the air hose connected to air pressure regulator at one end and to a nozzle at another end. Furthermore, the distal end of the lower clamp can be operably coupled to a pull type solenoid for pivoting the lower clamp relative to the upper clamp.

In one aspect, the upper cushion and the lower cushion can be positioned to face each other, such that the air hose can be positioned along the passageway, and wherein a portion of the nozzle can protrude outwards from the passageway. The solenoid is operable to pull the distal end of the lower clamp, resulting in the proximal end of the lower clamp to pivot upwards towards the upper cushion. To fill the airbag, an inflation port of the airbag can be sealably received into the inflation port, wherein a collar of the airbag adjacent to the inflation bag can lie between the upper cushion and the lower cushion. Turning ON the inflation system causes the lower clamp to pivot, wherein the lower cushion pushes the collar of the bag towards the upper cushion, thus retaining the collar of the bag while inflating the airbag. Turning the inflation system OFF, results in lowering of the lower clamp, releasing the collar of the airbag. The collar of the airbag herein refers to a portion of the airbag adjacent to the inflation port.

These and other objects and advantages of the embodiments herein will become readily apparent from the following detailed description taken in conjunction with the accompanying drawings

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying figures, which are incorporated herein, form part of the specification and illustrate embodi-

ments of the present invention. Together with the description, the figures further explain the principles of the present invention and to enable a person skilled in the relevant arts to make and use the invention.

FIG. **1** is a front and side perspective view of an inflation system, in accordance with an embodiment of the present invention.

FIG. **2** is a top and front perspective view of the inflation system of FIG. **1**, showing a handle and a clamp assembly.

FIG. **3** is a bottom and side perspective view of the inflation system of FIG. **1**, showing an air vent and a power interface.

FIG. **4** is a side view of the inflation system of FIG. **1**, showing the internal components of the inflation system.

FIG. **5** is a top and front perspective view of the inflation system of FIG. **4**, in accordance with an embodiment of the present invention.

FIG. **6** is a side view of the housing showing the power interface, the clamp assembly, and a solenoid clamp, in accordance with an embodiment of the present invention.

FIG. **7** shows the solenoid clamp, in accordance with an embodiment of the present invention.

FIG. **8** is an exploded view of a portion of the inflation system showing the solenoid and the clamp assembly, in accordance with an embodiment of the present invention.

FIG. **9** is a perspective view of an upper clamp of the clamp assembly, in accordance with an embodiment of the present invention.

FIG. **10** is a bottom view of a lower clamp of the clamp assembly, in accordance with an embodiment of the present invention.

FIG. **11** is a top and side perspective view of the lower clamp of FIG. **10**, in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION

Subject matter will now be described more fully hereinafter with reference to the accompanying drawings, which form a part hereof, and which show, by way of illustration, specific exemplary embodiments. Subject matter may, however, be embodied in a variety of different forms and, therefore, covered or claimed subject matter is intended to be construed as not being limited to any exemplary embodiments set forth herein; exemplary embodiments are provided merely to be illustrative. Likewise, the reasonably broad scope for claimed or covered subject matter is intended. Among other things, for example, the subject matter may be embodied as methods, devices, components, or systems. The following detailed description is, therefore, not intended to be taken in a limiting sense.

The word "exemplary" is used herein to mean "serving as an example, instance, or illustration." Any embodiment described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other embodiments. Likewise, the term "embodiments of the present invention" does not require that all embodiments of the invention include the discussed feature, advantage or mode of operation.

The terminology used herein is to describe particular embodiments only and is not intended to be limiting of embodiments of the invention. As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context indicates otherwise. It will be further understood that the terms "comprises", "comprising,", "includes" and/or "including", when used herein, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

The following detailed description includes the best currently contemplated mode or modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense but is made merely to illustrate the general principles of the invention since the scope of the invention will be best defined by the allowed claims of any resulting patent.

The present invention is directed to a novel inflation system for inflating packaging airbags. FIG. **1** shows an exemplary embodiment of the inflation system which can be used to inflate the packaging airbags. Shown in FIG. **1** is the inflation system **10**, according to an exemplary embodiment, that is compact and could be easily carried or placed on a table, hence also referred herein as a table-top inflation system. FIG. **1** shows a housing **12** which is covered by a thin sheet steel cover **14**. The cover **14** is having a plurality of holes near the top portion for air circulation. Furthermore, the cover **14** is shown to be secured to the housing **12** through a plurality of screws. On top of the cover is a handle **16** that is integrated to the cover **14**, the handle **16** can be used to carry the inflation system **10**. The housing **12** can act as a frame to which different components of the inflation system **10** can be assembled. A clamp assembly **18** is shown in FIG. **1** to be protruding from an opening provided on a side wall of the housing **12**. A nozzle **20** can also be seen protruding from the clamp assembly **18**. FIG. **2** shows a top and side perspective view of the inflation system **10** according to an exemplary embodiment of the present invention. The clamp assembly **18** can be more clearly seen, in FIG. **2**, protruding from the opening in the housing **12**. Also, the handle **16** can be seen clearly in FIG. **2** to be integrated to the cover **14**.

FIG. **3** shows the bottom and side perspective view of the inflation system **10** in accordance with an exemplary embodiment of the present invention. A power interface **22** can be seen coupled to the housing **12**, wherein the power interface **22** can have an input for a power cable and a switch for turning the inflation system **10** On and OFF. On the bottom side of the housing **12**, can be seen elongated perforations configured in a base of the housing **12**. These perforations can act as an air vent **26** for receiving air into the housing **12**.

The different components of the inflation system **10** can be seen in FIG. **4**. The air compressor **28** is mounted to the base of the housing **12**. The air compressor **28** is preferably a low noise air compressor, and more preferably, a silent air compressor. In one case, a muffler can be provided at an air input of the air compressor **28** to decrease its noise. Construction and working of air compressors for portable inflation devices are known to a skilled person and all the known types of air compressors with or without tanks are within the scope of the present invention. The air compressor **28** can be connected to an input port of an air pressure regulator (not shown). The air pressure regulator controls the pressure of the compressed air from the air compressor **28** within the set limits. The limits of air pressure can be set by a user, wherein the limits of air pressure can depend upon the packaging airbags to the inflated by the inflation system **10**. In a preferred embodiment, the air pressure can be regulated to be within the range of 8.8 to 10 PSI. In a more preferred embodiment, the air pressure can be set at 8.8 PSI. An air hose **30** connects an out port of the air pressure regulator to a nozzle **20**. The air hose **30** can be seen more clearly in FIG.

5, wherein the end of the air hose **30** is shown open i.e. not coupled to the air pressure regulator. Further can be seen in FIG. **5** is the air hose **30** passing to the clamp assembly **18** through an elongated aperture in the clamp assembly **18**. The clamp assembly can have a passageway for the air hose **30**, wherein a portion of the nozzle **20** can protrude from the clamp assembly **18**. Further can be seen in FIG. **4** is a solenoid **32** mounted to the housing **12** and operably coupled to the clamp assembly **18**.

FIG. **6** shows the solenoid clamp **36** for mounting the solenoid **32** to the housing **12**. Further can be seen in FIG. **6** is the air vent **26**, power interface **22**, clamp assembly **18**, and the spacers **34**. The solenoid clamp **36** can more be clearly seen in FIG. **7**, which shows a clamp with two perpendicular flanges. The two flanges are having four apertures **38** for the bolts that are used to couple the solenoid clamp **36** to the housing **12**. Another four apertures **40** can be used to couple the solenoid **32** through bolt and nuts. The spacing between the solenoid **32** and the solenoid clamp **36** can be adjusted through the spacers **34** shown in FIGS. **4** and **6**. In a preferred embodiment, the spacers **34** can be made of any soft material that can dampen the vibrations, for example rubber is known to reduce the vibrations. Additionally, the bolts to secure the solenoid **32** to the clamp **36**, and the clamp **36** to the housing can be incorporated with dampeners to reduce the vibrations. In one case, the bolts can be replaced with studs made of material that can decrease the vibrations.

FIG. **8** shows an exploded view of the front portion of the inflation system of FIG. **1** which showing the solenoid **32** and the clamp assembly **18**. As discussed above, the solenoid **32** is mounted to the side of the housing **12** through the solenoid clamp **36**. The space between the solenoid **32** and the solenoid clamp **36** can be adjusted using the spacers **34**. FIG. **8** shows four such kind of spacers to adjust the space between the solenoid **32** and the solenoid clamp **36**. Furthermore, it can be seen in FIG. **8** is a piston extension spring **42** coupled to the solenoid **32**. The solenoid **32** is a pull type solenoid, wherein the piston extension spring **42** can be coupled to a piston **48** of solenoid **32**, to keep the piston in extended configuration. Thus, one end of the piston extension spring **42** can eb coupled to the piston **48** of the solenoid **32**, while the other end of the piston extension spring **42** can hook to a stationary upper clamp **44** of the clamp assembly **18**. An embodiment of the upper clamp **44** is shown in FIG. **9** which has a small aperture **46** to which the piston extension spring **42** can hook. The piston **48** can be operably coupled to the lower clamp **50** to pivot the lower clamp **50** relative to the stationary upper clamp **44**. The piston **48** can be secured to the perpendicular flanges **52** that extends downwards in the lower clamp **50**. An embodiment of the lower clamp **50** is shown in FIG. **10**, which has a pair of flanges **52** that extends downwards and perpendicular to a base **72** of the lower clamp **50**. In one case, the piston **48** can be secured to the flanges **52** of the lower clamp **50** using fasteners, such as but not limited to nut and bolt.

The clamp assembly **18** can now be explained with the help of FIGS. **8-11**, as having the upper clamp **44** and lower clamp **50**. The upper clamp having a proximal end and a distal end. The upper clamp **44** is more clearly shown in FIG. **9** as having a flat base **54**, a pair of first flanges **56** that extends perpendicularly from opposite edges of the base **54**, and another pair of second flanges **58** that are perpendicular to the first pair of flanges **56** and the base **54**. The first pair of flanges **56** can extend from distal end of the upper clamp **44** up to near the center. The first pair of flanges **56** terminate into the second pair of flanges **58**. The upper clamp **44** can be coupled to the housing **12** at the second pair of flanges **58**, such that the proximal end of the first pair of flanges **56** can protrude from the opening of the housing **12**. The elongated aperture **60** can be seen configured in the base **54** of the upper clamp **44** which can receive the air hose **30**. The two apertures **62** in the base **54** of the upper clamp **44** can be used to further secure the upper clamp **44** to the housing **12**. As discussed before, the aperture **46** can be used to hook the piston extension spring **42**. The two apertures **64** in the first pair of flanges **56** and positioned near the center of the upper clamp **44**, can be used to secure the lower clamp **50**. The two apertures **66** again in the first pair of flanges **56** and at the distal ends can also be used to secure the upper clamp **44** to the housing **12**. The upper clamp **44** is shown in FIG. **8** to be positioned above the lower clamp **50**, with the base **54** facing upwards. The four small apertures **68** in the base **54** near the proximal ends of the upper clamp **44** can be used to secure the upper cushion **70**.

The lower clamp is shown in FIGS. **10** and **11** as having a base **72** and pair of flanges **74** that extends perpendicularly from opposite edges the base **72**. The lower clamp **50** having a proximal end and a distal end, the proximal end of the lower clamp **50** protrudes from the opening in the housing **12**. Two opposite apertures **76** in the pair of flanges **74** are positioned near the center of the length of the lower clamp **50** and can be used to secure the lower clam **50** to the upper clamp **44**. The apertures **76** are positioned to be registered with the apertures **64** of the upper clamp **44**, wherein the lower clamp **50** can be pivotally mounted to the upper clamp **44** at the apertures **76**. The four apertures **78** near the proximal end of the lower clamp **50** can secure the lower cushion **80**. FIG. **8** shows the upper cushion **70** and the lower cushion **80** which together are having a passageway for the hose **30**. Both the upper cushion **70** and the lower cushion **80** can have a longitudinal groove facing each other, such as to form the passageway for the air hose **30** and the nozzle **20**.

In one embodiment, an airbag having an inflation port can be filled with the inflation system **10**. The inflation port of the airbag can be sealably received into the nozzle **20**, wherein a collar of the airbag adjacent to the inflation port lies between the upper cushion **70** and the lower cushion **80**. Thereafter the inflation system **10** can be turned ON, wherein the solenoid **32** operates to pull the distal end of the lower clamp **50**, resulting in the proximal end of the lower clamp **50** to pivot towards the proximal end of the upper clamp **44**. As a result, the lower cushion **80** can press against the upper cushion **70**, wherein the collar of the air bag can be held between the upper cushion **70** and the lower cushion **80**. In one case, the upper cushion and the lower cushion can be made of any soft material, such as rubber pads. The air compressor **28** operates to supply air under pressure to the airbag through the air pressure regulator. Once the airbag is inflated, the inflation unit **10** can be turned OFF, resulting in releasing of the lower clamp, and the airbag can then be removed from the nozzle **20**.

The power supply to the inflation system **10** can be transmitted through a power cord, wherein the power interface **22** can receive the power cord. The power interface **22** can also be provided with a fuse to protect any damage from electricity. The power cable can be interrupted with a foot-pedal switch, such that the foot-pedal switch can be pressed to allow the power to transmit to the inflation system **10**. Releasing the foot-pedal switch cut-off the power supply thereby turning the to the inflation system **10** OFF. It will be appreciated by a skilled person that any other mechanism to turn the inflation apparatus on and off is within the scope of the present invention.

While the foregoing written description of the invention enables one of ordinary skill to make and use what is considered presently to be the best mode thereof, those of ordinary skill will understand and appreciate the existence of variations, combinations, and equivalents of the specific embodiment, method, and examples herein. The invention should therefore not be limited by the above-described embodiment, method, and examples, but by all embodiments and methods within the scope and spirit of the invention as claimed.

What is claimed is:

1. An inflation system comprising:

a housing;

a clamp assembly, the clamp assembly having an elongated upper clamp and an elongated lower clamp, the upper clamp having a proximal end and a distal end, the lower clamp having a proximal end and a distal end, the upper clamp is mounted to the housing, the lower clamp is pivotally mounted along a lateral axis, the lateral axis is perpendicular to length of the lower clamp and between the proximal end and the distal end of the lower clamp, the proximal end of the upper clamp and the proximal end of the lower clamp protrudes from an opening in the housing;

an upper cushion coupled to the proximal end of the upper clamp;

a lower cushion coupled to the proximal end of the lower clamp such that the lower cushion and the upper cushion faces each other, the lower cushion and the upper cushion forms a passageway; and

an air hose having a nozzle at one end wherein a portion of the air hose and a portion of the nozzle are retained in the passageway.

2. The inflation system of claim **1**, wherein the inflation system further comprises a solenoid having a piston, the piston is operably coupled to the distal end of the lower clamp such that the distal end of the lower clamp pivots to move the proximal end of the lower clamp towards the proximal end of the upper clamp pressing at least a portion of the lower cushion against at least a portion of the upper cushion.

3. The inflation apparatus of claim **2**, wherein the solenoid is a pull solenoid.

4. The inflation apparatus of claim **3**, wherein the solenoid further comprises a spring, the spring configured to keep the piston in an extended configuration.

5. The inflation apparatus of claim **4**, wherein the spring is having a first end and a second end, the first end coupled to the piston and the second end coupled to the distal end of the upper clamp.

6. The inflation system of claim **2**, wherein the solenoid is coupled to a solenoid clamp and the solenoid clamp is coupled to the housing, the solenoid coupled to the solenoid clamp through dampers, the dampers configured to reduce vibrations.

7. The inflation system of claim **1**, wherein the air hose is further connected to a pressurized air source at its other end.

8. The inflation system of claim **7**, wherein the nozzle is configured to receive an inflation port of a packaging airbag.

9. The inflation system of claim **8**, wherein the nozzle is of a length such that a collar of the packaging airbag lies between the upper cushion and the lower cushion when the inflation port is received into the nozzle, the collar is a portion of the packaging airbag adjacent to the inflation port.

10. The inflation system of claim **7**, wherein the pressurized air source is an air compressor.

11. The inflation system of claim **10**, wherein the air hose is connected to an out-port of an air pressure regulator and an in-port of the air pressure regulator is connected to the air compressor, the air pressure regulator is configured to regulate pressure of the air within predetermined limits.

12. The inflation system of claim **11**, wherein the predetermined limit is in a range of 8.8 to 10 psi.

13. The inflation system of claim **1**, wherein a first pair of flanges having a first pair of apertures extends downwards from the upper clamp, a second pair of flanges extend upwards from the lower clamp, the second pair of flanges having a second pair of apertures positioned to be registrable with the first pair of apertures, and the lower clamp pivotally coupled to the upper clamp at the first pair of apertures and the second pair of the apertures.

14. The inflation system of claim **1**, wherein the inflation system further comprises a foot pedal switch, the foot pedal switch configured to control power supply to the inflation system.

15. The inflation system of claim **1**, wherein the upper cushion is having a first longitudinal groove, the lower cushion is having a second longitudinal grove, wherein the first longitudinal groove and the second longitudinal groove forms the passageway.

16. The inflation system of claim **1**, wherein the upper cushion and the lower cushion are rubber pads.

17. The inflation system of claim **1**, wherein the housing is having a rectangular base, two upright walls at short sides of the base, an open top, and two open sides at longer sides of the base, the opening is provided in one of the two upright walls, the open top and the two open sides are covered by a cover, the cover having a handle.

* * * * *